

Title (en)  
ACTIVE COOLING OF A MOTOR WITH INTEGRATED COOLING CHANNEL

Title (de)  
AKTIVE KÜHLUNG EINES MOTORS MIT INTEGRIERTEM KÜHLKANAL

Title (fr)  
REFROIDISSEMENT ACTIF DE MOTEUR AVEC CONDUIT DE REFROIDISSEMENT INTÉGRÉ

Publication  
**EP 2880745 B1 20191127 (DE)**

Application  
**EP 13739969 A 20130717**

Priority  
• DE 102012107109 A 20120802  
• EP 2013065097 W 20130717

Abstract (en)  
[origin: WO2014019853A2] The invention relates to a motor, comprising an electronics housing (1) having integrated motor electronics, a stator, and a rotor. The stator comprises a stator bushing (3) and a laminated stator core having motor windings. The stator bushing (3) is arranged axially between the electronics housing (1) and the rotor. The motor according to the invention has an air-conveying element (14) connected to the rotor in a rotationally fixed manner and at least one axially extending passage opening (24) arranged in the stator bushing (3). The air-conveying element (14) is arranged axially between the stator bushing (3) and the rotor and has a circumferential axial intake opening (15) on the side of the stator bushing (3). During motor operation, the air-conveying element (14) sucks in an axial volumetric air flow (Z) at an external wall of the electronics housing (1) through the intake opening (15) and the passage opening (24).

IPC 8 full level  
**H02K 5/18** (2006.01); **H02K 5/20** (2006.01); **H02K 9/06** (2006.01); **H02K 9/14** (2006.01); **H02K 11/33** (2016.01); **H02K 5/22** (2006.01)

CPC (source: EP US)  
**H02K 5/18** (2013.01 - EP US); **H02K 5/207** (2021.01 - EP US); **H02K 5/22** (2013.01 - US); **H02K 9/06** (2013.01 - EP US);  
**H02K 9/14** (2013.01 - EP US); **H02K 11/33** (2016.01 - EP US)

Citation (opposition)  
Opponent : ZIEHL-ABEGG SE  
• DE 10313273 A1 20041007 - EBM PAPST Mulfingen GmbH & Co [DE]  
• JP 2005192364 A 20050714 - MATSUSHITA ELECTRIC IND CO LTD  
• US 2011074235 A1 20110331 - LEUNG NGAN FAI [US], et al  
• WO 2009063774 A1 20090522 - TOSHIBA KK [JP], et al  
• WO 9741630 A1 19971106 - SIEMENS ELECTRIC LTD [CA]  
• US 2005116554 A1 20050602 - DANO VIKTOR [DE], et al  
• US 2011148230 A1 20110623 - KNORR JOACHIM [DE], et al  
• EP 1891335 B1 20170329 - GEBR BECKER GMBH [DE]  
• US 4908538 A 19900313 - GEBERTH JR JOHN D [US]  
• US 6119636 A 20000919 - FAN GUO XIANG [US]  
• EP 2369183 B1 20121121 - EBM PAPST Mulfingen GmbH & Co [DE]  
• CN 1606216 A 20050413 - MITSUBISHI ELECTRIC CORP [JP]  
• DE 19727165 A1 19990107 - BOSCH GMBH ROBERT [DE]  
• EP 1050682 A2 20001108 - GATE SPA [IT]  
• EP 1622243 A1 20060201 - SIEMENS AG [DE]

Cited by  
DE102022134463A1

Designated contracting state (EPC)  
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

DOCDB simple family (publication)  
**DE 102012107109 A1 20140206**; CN 104521116 A 20150415; CN 104521116 B 20170308; DE 202012013669 U1 20190430;  
DK 2880745 T3 20200217; EP 2880745 A2 20150610; EP 2880745 B1 20191127; ES 2770450 T3 20200701; PL 2880745 T3 20200518;  
PT 2880745 T 20200304; US 2015263591 A1 20150917; US 9531239 B2 20161227; WO 2014019853 A2 20140206;  
WO 2014019853 A3 20140814

DOCDB simple family (application)  
**DE 102012107109 A 20120802**; CN 201380041125 A 20130717; DE 202012013669 U 20120802; DK 13739969 T 20130717;  
EP 13739969 A 20130717; EP 2013065097 W 20130717; ES 13739969 T 20130717; PL 13739969 T 20130717; PT 13739969 T 20130717;  
US 201314418243 A 20130717